THE GENESIS OF THE CHEMICAL ELEMENTS.

By James Moir, D.Sc., M.A., F.R.S.S.Af.

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The author has discovered a new and remarkable relationship between the atomic weights, whereby the accepted values can be calculated with remarkable accuracy. The assumptions required are: (1) a *proton* ($\bar{H}$) consisting of $\frac{1}{1}\frac{1}{1}\frac{1}{2}$ of the atom of hydrogen, (2) another (μ) consisting of $\frac{1}{1}\frac{1}{1}\frac{1}{2}$ of the atom of hydrogen, and (3) another (ω) consisting of $\frac{1}{1}\frac{1}{0}$ of the hydrogen atom; also that valency depends on the number of times the *proton* μ occurs in the element in question.

All the elements are multiples of $\bar{H}$ plus the required and regularly varying number of the *proton* μ; but some contain, in addition, an erratic number of the *proton* ω. The following Table gives the results; and the last column gives the experimental atomic weights reduced to the same basis.

Symbol.	Natural Formula.	Formula in Figures ($\bar{H} = 1$)	Experimental Atomic Weight (O = 16·018)
H	$H + \mu$	1·00901	1·0090
He	$4\bar{H}$	4·00	4·004
Li	$7\bar{H} + \mu$	7·009	7·008
Gl	$9\bar{H} + 2\mu + \omega$	9·118	9·120
B	$11\bar{H} + 3\mu$	11·027	11·012
C	$12\bar{H} + 4\mu$	12·036	12·034
N	$14\bar{H} + 3\mu$	14·027	14·023
O	$16\bar{H} + 2\mu$	16·018	16·018
F	$19\bar{H} + \mu$	19·009	19·021
Ne	$20\bar{H}$	20·00	20·02
Na	$23\bar{H} + \mu$	23·009	23·025
Mg	$24\bar{H} + 2\mu + 3\omega$	24·318	24·347
Al	$27\bar{H} + 3\mu + \omega$	27·127	27·130
Si	$28\bar{H} + 4\mu + 3\omega$	28·336	28·332
P	$31\bar{H} + 3\mu$	31·027	31·034

Symbol.	Natural Formula.	Formula in Figures ($\bar{H} = 1$).	Experimental Atomic Weight (O = 16·018).
S	$32H + 2\mu + \omega$	32·118	32·105
Cl	$35\bar{H} + \mu + 5\omega$	35·509	35·500
A	$40\bar{H}$	40·00	40·045
K	$39\bar{H} + \mu + \omega$	39·109	39·138
Ca	$40\bar{H} + 2\mu + \omega$	40·118	40·134
Sc	$44\bar{H} + 3\mu + \omega$	44·127	44·150
Ti	$48\bar{H} + 4\mu + \omega$	48·136	48·154
V	$51\bar{H} + 5\mu + 2\omega$	51·245	51·257
Cr	$52\bar{H} + 6\mu + \omega$	52·154	52·158
Mn	$55\bar{H} + 2\mu$	55·018	54·992
Fe	$55\bar{H} + 2\mu + 9\omega$	55·918	55·913
Ni	$58\bar{H} + 2\mu + 7\omega$	58·718	58·745
Co	$59\bar{H} + 2\mu$	59·018	59·066
Cu	$63\bar{H} + 2\mu + 6\omega$	63·618	63·641
Zn	$65\bar{H} + 2\mu + 4\omega$	65·418	65 443
Ga	$70\bar{H} + 3\mu$	70·027	69·98
Ge	$72H + 4\mu + 5\omega$	72·536	72·58
As	$75\bar{H} + 3\mu$	75·027	75·084
Se	$79\bar{H} + 2\mu + 3\omega$	79·318	79·289
Br	$80\bar{H} + \mu$	80·009	80·010
Kr	$83\bar{H}$	83·00	83·09
Rb	$85\bar{H} + \mu + 5\omega$	85·509	85·545
Sr	$87\bar{H} + 2\mu + 7\omega$	87·718	87·718
Y	$89\bar{H} + 3\mu$	89·027	89·099
Zr	$90\bar{H} + 4\mu + 6\omega$	90·636	90·702
Cb	$93\bar{H} + 5\mu + 6\omega$	93·645	93·605
Mo	$96\bar{H} + 6\mu$	96·054	96·108
Ru	$101\bar{H} + 8\mu + 8\omega$	101·872	101·82
Rh	$103\bar{H} + 8\mu$	103·072	103·02
Pd	$106\bar{H} + 2\mu + 8\omega$	106·818	106·820
Ag	$108H + \mu$	108·009	108 002
Cd	$112\bar{H} + 2\mu + 5\omega$	112·518	112·526
In	$115\bar{H} + 3\mu$	115·027	114·93
Sn	$119\bar{H} + 4\mu + \omega$	119·136	119·135
Sb	$120H + 3\mu + 3\omega$	120·327	120·336
Te	$127\bar{H} + 2\mu + 6\omega$	127·618	127·644
I	$127H + \mu$	127·009	127·063
X	$130\bar{H}$	130·00	130·15
Cs	$133\bar{H} + \mu$	133·009	132·96

Symbol.	Natural Formula.	Formula in Figures ($\bar{H} = 1$).	Experimental Atomic Weight ($O = 16{\cdot}018$).
Ba	$137\bar{H} + 2\mu + 5\omega$	137·518	137·524
La	$139\bar{H} + 3\mu + \omega$	139·127	139·16
Ce	$140\bar{H} + 4\mu + 3\omega$	140·336	140·408
Pr to Yb	All $n\bar{H} + 3\mu$	—	—
		—	—
Ta	$181\bar{H} + 5\mu + \omega$	181·145	181·205
W	$184\bar{H} + 6\mu + \omega$	184·154	184·208
Os	$191\bar{H} + 8\mu$	191·072	191·10
Ir	$193\bar{H} + 8\mu + 3\omega$	193·372	193·32
Pt	$195\bar{H} + 4\mu + 2\omega$	195·236	195·221
Au	$197\bar{H} + 3\mu + 4\omega$	197·427	197·423
Hg	$200\bar{H} + 2\mu + 2\omega$	200·218	200·226
Tl	$204\bar{H} + \mu + 2\omega$	204·209	204·23
Pb	$207\bar{H} + 2\mu + 3\omega$	207·318	207·33
Bi	$208\bar{H} + 3\mu + 3\omega$	208·327	208·235
Ra	$226\bar{H} + 2\mu$	?226·018	226·6
Th	$233\bar{H} + 4\mu$	?233·036	232·68
U	$239\bar{H} + 6\mu$	?239·054	238·77

It will be seen that the new scheme brings out closer relationships between such groups as the alkali-metals and the halogens; and that, although it follows the Periodic Law, it would require the latter to be modified in important particulars, *e.g.*, from platinum to bismuth.

The author thinks it not impossible that in certain reactions, where the valency increases, one or more protons μ go amissing despite the "conservation of mass." Thus the components of NH_4Cl contain 8μ, whereas NH_4Cl probably only contains 6μ.

Chemical Laboratory, Mines Department, Johannesburg.
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